

**FIG. 5**



FIG. 8

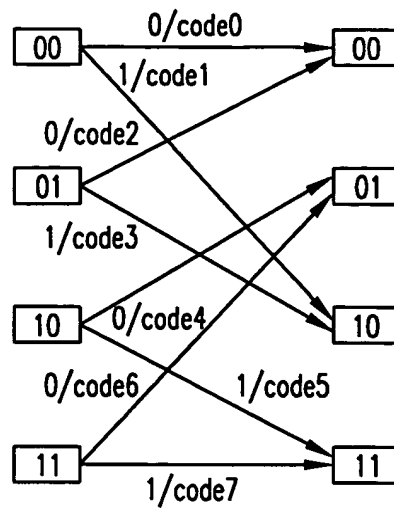


FIG. 9

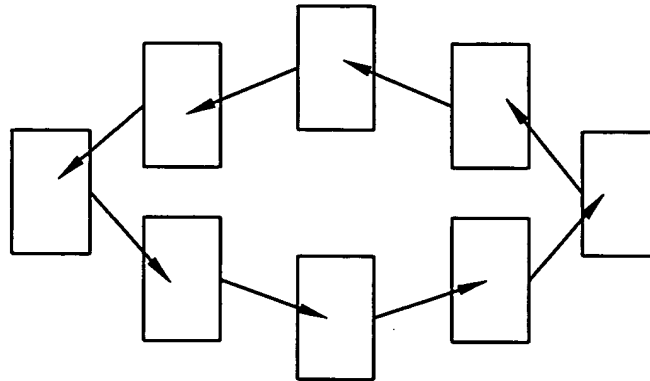
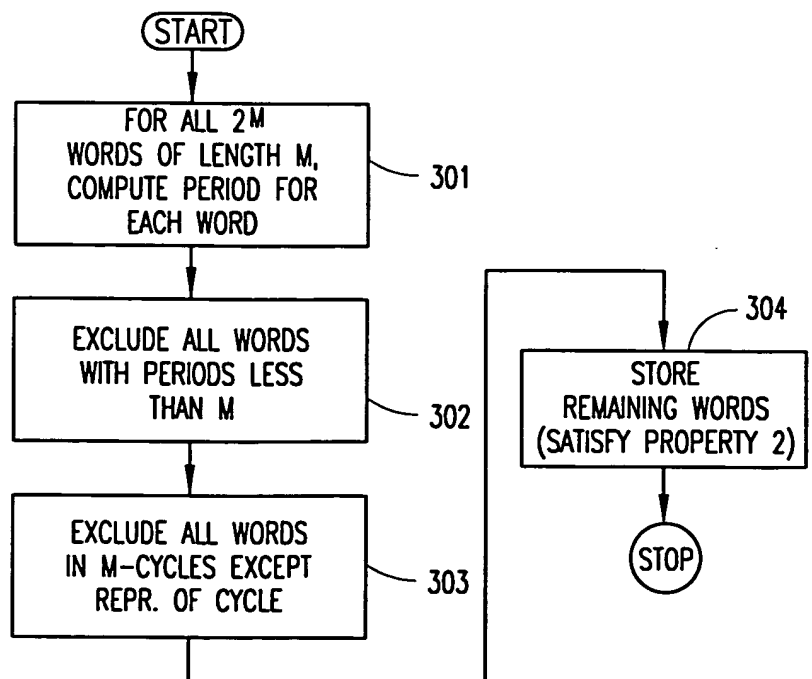


FIG. 10



00000→00000 , p=1, repr.: 00000  
 00001→00010→00100→01000→10000→00001, p=5, repr.: 00001  
 00011→00110→01100→11000→10001→00011, p=5, repr.: 00011  
 00101→01010→10100→01001→10010→00101, p=5, repr.: 00101  
 00111→01110→11100→11001→10011→00111, p=5, repr.: 00111  
 01011→10110→01101→11010→10101→01011, p=5, repr.: 01011  
 01111→11110→11101→11011→10111→01111, p=5, repr.: 01111  
 11111→11111, p=1, repr.: 11111

FIG. 11

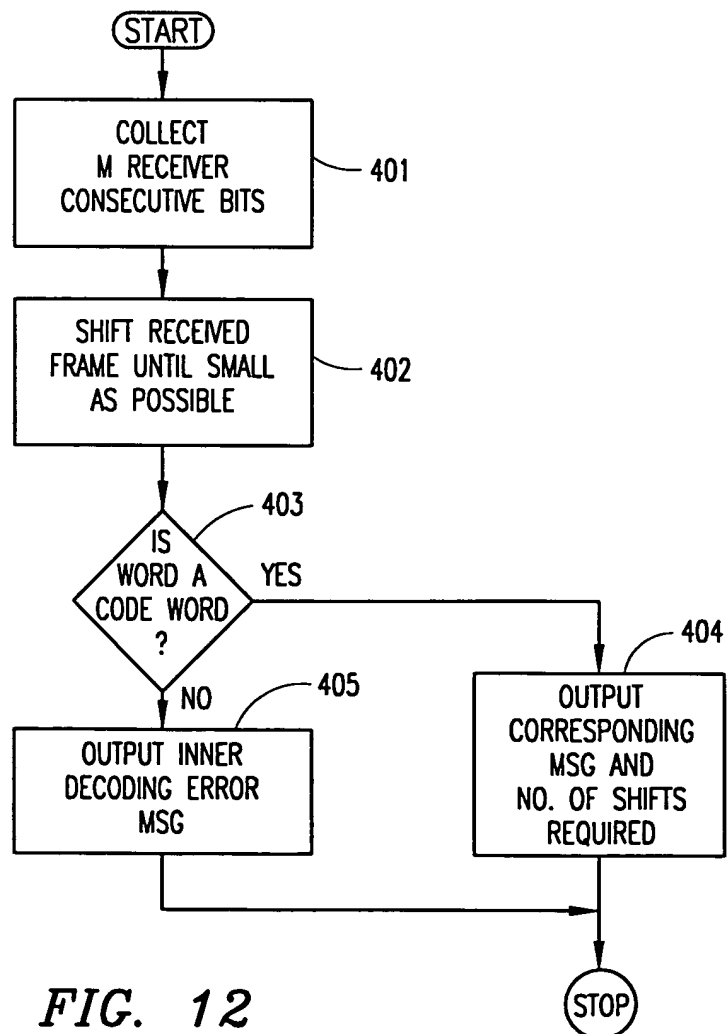


FIG. 12

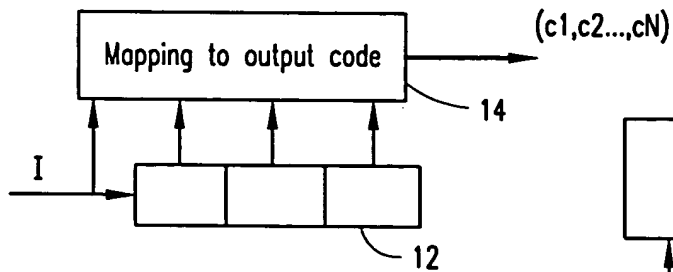
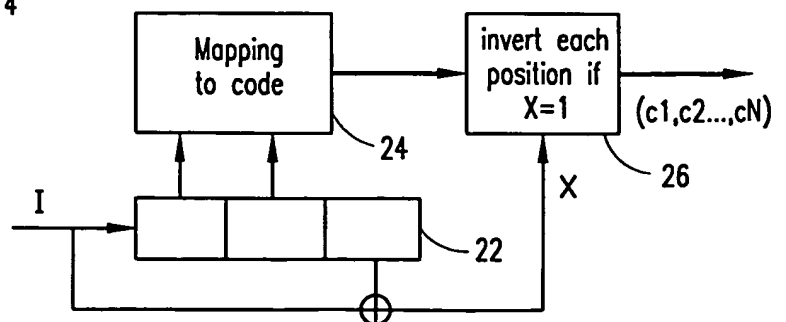
```

M=5;
code=[]; % will contain the set of code words
used=zeros(1,2^M-1); % keep track of words that are necessary to test
for i=1:2^M-1 % exclude all-zero sequence where p=1, always
if (used(i)==0) % if potential candidate, calculate period
x=i;
codeshifts=[i]; % first word in p-cycle
bad=0; % flag set if p<M
for j=1:M-1 % x==i after M shifts, of course
x=2*x; % shift
if (x>=2^M) x=x-2^M+1; end; % end around shift
if (x==i) bad=1; end; % is x==i after less than M shifts?
codeshifts=[codeshifts x]; % save smallest representative
used(codeshifts)=ones(size(codeshifts)); % and mark the shifts as used
end;

```

**FIG. 13**

M	Cardinality of code set
2	1
3	2
4	3
5	6
6	9
7	18
8	30
12	335
14	1161
16	4080

**FIG. 14****FIG. 15A****FIG. 15B**

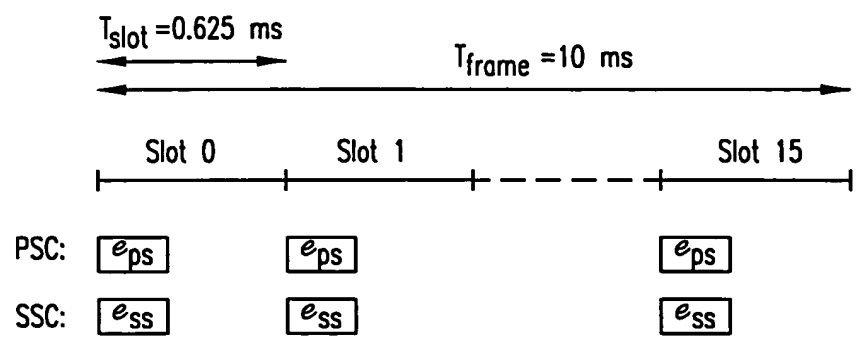


FIG. 16

Sync. Code	Code Type	Information		
		Slot Timing Indication (STI)	Frame Timing Indication (FTI)	Long Code Indication (LCI)
PSC	Orth. Gold	YES	NO	NO
SSC	Orth. Gold	-	NO	YES

FIG. 17

Sync. Code	Code Type	Information		
		Slot Timing Indication (STI)	Frame Timing Indication (FTI)	Long Code Indication (LCI)
PSC	Orth. Gold	YES	NO	NO
SSC	Orth. Gold	-	YES	YES

FIG. 18

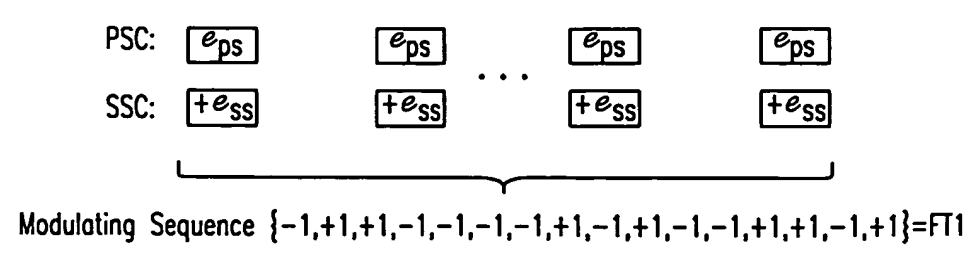
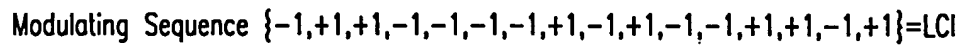


FIG. 19



**FIG. 21**

FIG. 22

Parameter	Value
Chip Rate	4.096 Mc/s
Symbol Rate of the physical channel that carries BCCH	16 kSymbols/s
Frame Length	10 ms
Slots per Frame	16
Symbols per Slot	10
Chips per Symbol	256
Number of correlator units in MS	16
Number of coherently accumulated 256-chip correlations needed for sufficient noise/fading suppression	16
Number of non-coherently accumulated 256-chip correlations needed for sufficient noise/fading suppression	32
Number of long codes in the system	256
Long Code Grouping	1x256, 4x32 16x16, 32x4

STEP	PROC	ARIB	METHOD 1	METHOD 2
2	CORR	Max 16x16x16= 4096, Avg 2048	Max 16x16x16= 4096, Avg 2048	16x16=256
	DELAY	Max 16 Frames, Avg 8 Frames	Max 16 Frames, Avg 8 Frames	1 Frame
3	CORR	16x16=256	No further correlations needed	No further correlations needed
	DELAY	16 Symbols=1.6 Slots	No further delay	No further delay
Total	CORR (avg) DELAY (avg)	2048+256=2304  8 Frames+1.6 Slots =8.1 Frames	2048  8 Frames	256+2048=256  1 Frame

*FIG. 23A*

STEP	PROC	ARIB	METHOD 1	METHOD 2
2	CORR	4x16=64	4x16=64	16x16=256
	DELAY	1 Frame	1 Frame	1 Frame
3	CORR	Max 16x32x32= 16384, Avg 8192	Max 32x32=1024, Avg 512	Max 32x32=1024, Avg 512
	DELAY	Max 1024 Symbols =102.4 Slots=6.4 Frames, Avg 3.2 Frames	Max 64 Symbols= 6.4 Slots=0.4 Frames, Avg 0.2 frames	Max 64 Symbols= 6.4 Slots=0.4 Frames, Avg 0.2 frames
Total	CORR (avg) DELAY (avg)	64+8192=8256  1 Frame+3.2 Frames=4.2 Frames	64+512=576  1 Frame+0.2 Frames=1.2 Frames	256+512=768  1 Frame+1.6 Slots =1.2 Frames

*FIG. 23B*



STEP	PROC	ARIB	METHOD 1	METHOD 2
2	CORR DELAY	16x16=256 1 Frame	16x16=256 1 Frame	16x16=256 1 Frame
Step 3	CORR DELAY	Max 16x16x32= 8192, Avg 4096  Max 512 Symbols= 51.2 Slots=3.2 Frames, Avg 1.6 Frames	Max 16x32=512 Avg 256  Max 32 Symbols= 3.2 Slots, Avg 1.6 Slots=0.1 Frames	Max 16x32=512 Avg 256  Max 32 Symbols= 3.2 Slots, Avg 1.6 Slots=0.1 Frames
Total	CORR (avg) DELAY (avg)	256+4096=4352  1 Frame+1.6 Frames=2.6 Frames	256+256=512  1 Frame+0.1 Frames=1.1 Frames	256+256=512  1 Frame+0.1 Frames=1.1 Frames

*FIG. 23C*

STEP	PROC	ARIB	METHOD 1	METHOD 2
2	CORR DELAY	Max 16x2x16=512, Avg 256 Max 2 Frames, Avg 1 Frame		16x16=256 1 Frame
3	CORR DELAY	Max 4x16x32=512, Avg 256  Max 128 Symbols= 12.8 Slots=0.8 Frames, Avg 0.6 Frames	4x32=128  32 Symbols=3.2 Slots=0.2 Frames	4x32=128  32 Symbols=3.2 Slots=0.2 Frames
Total	CORR (avg) DELAY (avg)	256+1024=1280  1 Frame+0.6 Frames=1.6 Frames	256+128=384  1 Frame+0.2 Frames=1.2 Frames	256+128=384  1 Frame+0.2 Frames=1.2 Frames

*FIG. 23D*